ABSTRACT

A material (100) formed of a sintered aggregation of ceria particles (106), mullite particles (108) and an alumina matrix material (110). Differential thermal expansion of the ceria and mullite particles generates thermal stress sufficient to create micro-cracking of the ceria particles. The ratio of ceria to mullite may be selected to achieve a desired coefficient of thermal expansion for matching the thermal growth of a mating CMC material (102). The micro cracks provide the material with a desired degree of strain tolerance useful in high temperature applications such as a solid core gas turbine vane (20).